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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/666,466	09/16/2003	Jason E. Rehm	14045	8343

66111 7590 03/21/2007
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EXAMINER

KRISHNAMURTHY, RAMESH

ART UNIT	PAPER NUMBER
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3753

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/21/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/666,466

Applicant(s)

REHM ET AL.

Examiner

Ramesh Krishnamurthy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 51-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 51, 52, 53, 54, 55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- ☐ Notice of Informal Patent Application
- ☐ Other: _____

This office action is responsive to communications filed December 19, 2006.

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on December 19, 2006 along with the amendment filed on November 16, 2006 has been entered.

Claims 51 – 55 are pending.

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 51 – 53 are rejected under 35 U.S.C. 103(a) as being obvious over Hasselbrink, Jr. et al. (US 6,782,746) in view of Domeier et al. (US 6,422,528).

The applied reference has a common inventor with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed

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in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Hasselbrink, Jr. et al. discloses (see Fig. 1, for example) a microfluidic device (100) for microfluidic control comprising: substrate (the structure within which the conduit (130) is disposed); a conduit within said substrate having a first end (140) and a second end (141), and having an inner diameter between 0.1 μm and 1000 μm (Col. 4, lines 42 – 48) and a composite mobile element i.e. regulator (120) that is moveable within the conduit wherein the regulator comprises a substantially elastic material, the mobile element comprising a polymer matrix and wherein the mobile element slides away from one end of the channel to another within the conduit when a fluid pressure is applied to the first end.

The patent to Hasselbrink, Jr. et al. discloses the claimed invention with the exception of explicitly disclosing polymeric particles dispersed within said element.

The patent to Domeier et al. discloses that it is known in the art to provide polymer particles (Col. 8, lines 30 – 35) within a composite element that comprises a polymer matrix, for the purpose of achieving a desired modification in the property of the composite element.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided in the polymer matrix of the mobile element a dispersion of polymer particles for the purpose of achieving a desired modification in the property of the composite element, as evident from Domeier et al.

The specific choice of having the polymeric particles either chemically bound or not chemically bound is a design choice over the features disclosed in the combination of Hasselbrink, Jr. et al. and Domeier et al. as set forth above, in that it neither solves any stated problem nor provides any new and/or unexpected result.

4. Claims 54 and 55 are rejected under 35 U.S.C. 103(a) as being obvious over the combination of Hasselbrink, Jr. et al. and Domeier et al. as set forth above, and further in view of Rehm et al. (Micro Total Analysis Systems 2001, 227 – 229)

The combination of Hasselbrink, Jr. et al. and Domeier et al. discloses the claimed invention with the exception of explicitly disclosing the polymer matrix to comprise a halogenated acrylate monomer.

Rehm et al. (2001) teaches the use of (see lines 3 – 4 under the paragraph entitled "Fabrication") trifluoroethylacrylate i.e. a halogenated acrylate as a monomer in the fabrication of a mobile flow control element.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a halogen acrylate monomer in the fabrication of the regulator element in the combination of Hasselbrink, Jr. et al. and Domeier et al. as a halogen acrylate monomer is an art recognized equivalent to the monomer(s) used in

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Hasselbrink, Jr. et al., as evidenced by its successful use in Rehm et al. in fabricating mobile flow control elements.

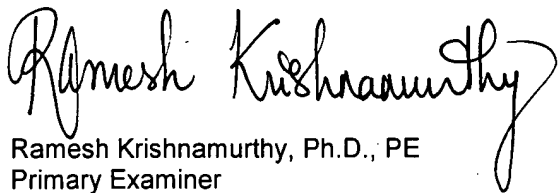
Response to Arguments

5. Applicant's arguments with respect to claims rejected above have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramesh Krishnamurthy whose telephone number is (571) 272 – 4914. The examiner can normally be reached on Monday - Friday from 10:00 AM to 6:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Keasel, can be reached on (571) 272 – 4929. The fax phone number for the organization where this application or proceeding is assigned is (571) 273 – 8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Ramesh Krishnamurthy, Ph.D., PE
Primary Examiner
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